Do-it-yourself service precautions

If you perform maintenance yourself, be sure to follow the correct procedure given in these sections.

Items	Parts and tools
Battery condition (→P. 328)	• Warm water • Baking soda • Grease • Conventional wrench (for terminal clamp bolts)
Brake fluid level (→P. 325)	• FMVSS No.116 DOT 3 or SAE J1703 brake fluid • Rag or paper towel • Funnel (used only for adding brake fluid)
Engine coolant level (→P. 324)	• "Toyota Super Long Life Coolant" or similar high quality ethylene glycol based non-silicate, non-amine, non-nitrite and non-borate coolant with long-life hybrid organic acid technology. For the U.S.A.: "Toyota Super Long Life Coolant" is pre-mixed with 50% coolant and 50% deionized water. For Canada: "Toyota Super Long Life Coolant" is pre-mixed with 55% coolant and 45% deionized water. • Funnel (used only for adding engine coolant)

Items	Parts and tools
Engine oil level (→P. 320)	• "Toyota Genuine Motor Oil" or equivalent • Rag or paper towel, funnel (used only for adding engine oil)
Fuses (→P. 353)	• Fuse with same amperage rating as original
Headlight aim (→P. 365)	• Phillips-head screwdriver
Power steering fluid level (→P. 327)	• Automatic transmission fluid DEXRON®II or III • Rag or paper towel • Clean funnel
Radiator and condenser (→P. 325)	—
Tire inflation pressure (→P. 340)	• Tire pressure gauge • Compressed air source
Washer fluid (→P. 331)	• Water washer fluid containing anti-freeze (for winter use) • Funnel

CAUTION

The engine compartment contains many mechanisms and fluids that may move suddenly, become hot, or become electrically energized. To avoid death or serious injury:

When working on the engine compartment

- Keep hands, clothing, and tools away from the moving fan and engine drive belt.
- Be careful not to touch the engine, radiator, exhaust manifold, etc. right after driving as they may be hot. Oil and other fluids may also be hot.
- Do not leave anything that may burn easily, such as paper or rags, in the engine compartment.
- Do not smoke, cause sparks or expose an open flame to fuel or the battery. Fuel and battery fumes are flammable.
- Be extremely cautious when working on the battery. It contains poisonous and corrosive sulfuric acid.

When working near the electric cooling fan or radiator grille

Be sure the ignition is off.
With the ignition on, the electric cooling fan may automatically start to run if the air conditioning is on and/or the coolant temperature is high.
(→P. 325)

Safety glasses

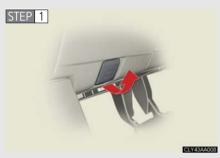
Wear safety glasses to prevent flying or falling material, fluid spray, etc. from getting in the eyes.

NOTICE

If you remove the air cleaner:

Driving with the air filter removed may cause excessive engine wear due to dirt in the air. Also a backfire could cause a fire in the engine compartment.

Hood

Release the lock from the inside of the vehicle to open the hood.

Pull the hood release lever.

The hood will pop up slightly.

Lift the hood catch and lift the hood.

CAUTION

■ **Pre-driving check**

Check that the hood is fully closed and locked.
If the hood is not locked properly it may open while the vehicle is in motion and cause an accident, which may result in death or serious injury.

Positioning a floor jack

When raising your vehicle with a floor jack, position the jack correctly. Improper placement may damage your vehicle or cause injury.

▶ Front

▶ Rear (2WD models)

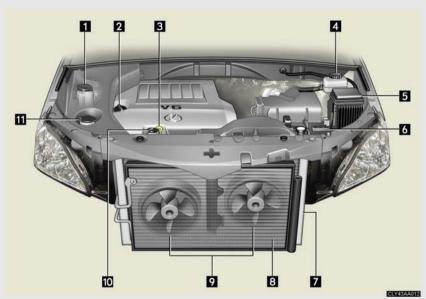
▶ Rear (4WD models)

CAUTION

■ **When raising your vehicle:**

Make sure to observe the following to reduce the possibility of death or serious injury.

- Lift up the vehicle using a floor jack such as the one shown in the illustration.
- Do not use the jack that was supplied with your vehicle.
- Do not put any part of your body or get underneath the vehicle supported only by the floor jack.
  Always use automotive jack stands on a solid, level surface.
- Do not start the engine while the vehicle is supported by the floor jack.
- Stop the vehicle on level firm ground, firmly set the parking brake and put the shift lever in P.
- Make sure to set the floor jack properly at the jack point.
  Raising the vehicle with an improperly positioned floor jack will damage the vehicle and may cause the vehicle to fall off the floor jack.
- Do not raise the vehicle while someone is in the vehicle.
- When raising the vehicle, do not place any objects on top of or underneath the floor jack.
- Vehicles with electronically modulated air suspension:
  Be sure to turn off the height control and stop the engine. Otherwise, the vehicle height may change in the automatic leveling function. (→P. 169)

Engine compartment

1 Power steering fluid reservoir (→P. 327)

2 Engine oil filler cap (→P. 320)

3 Engine oil level dipstick (→P. 320)

4 Brake fluid reservoir (→P. 325)

5 Fuse box (→P. 353)

6 Battery (→P. 328)

7 Radiator (→P. 325)

8 Condenser (→P. 325)

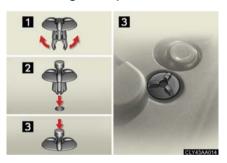
9 Electric cooling fans

10 Engine coolant reservoir (→P. 324)

11 Washer fluid tank (→P. 331)

Engine compartment cover

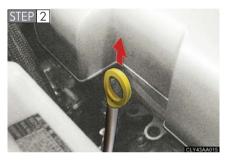
■ Removing the engine compartment cover

■ Installing the clips

1 Open
2 Insert
3 Press

Engine oil

With the engine at operating temperature and turned off, check the oil level on the dipstick.

n Checking the engine oil

STEP 1 Park the vehicle on level ground. After turning off the engine, wait more than five minutes for the oil to drain back into the bottom of the engine.

STEP 2 Hold a rag under the end and pull the dipstick out.

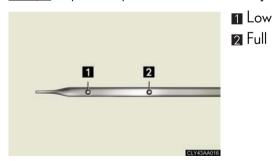
STEP 3 Wipe the dipstick clean.

STEP 4 Reinsert the dipstick fully.

STEP 5 Holding a rag under the end, pull the dipstick out and check the oil level.

STEP 6 Wipe the dipstick and reinsert it fully.

1 Low

2 Full

n Adding engine oil

If the oil level is below or near the low level mark, add engine oil of the same type as already in the engine.

Make sure to check the oil type and prepare the items needed before adding oil.

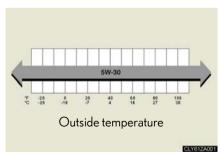
Oil grade	ILSAC multi-grade engine oil
Items	Clean funnel

STEP 1 Remove the oil filler cap.

STEP 2 Add engine oil slowly, checking the dipstick.

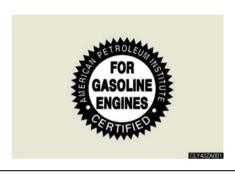
STEP 3 Install the filler cap, turning it clockwise.

It takes about 1.6 qt. (1.5 L, 1.3 Imp. qt.) to raise the oil level from low to full on the dipstick.

n Recommended viscosity

SAE 5W-30 is the best choice for good fuel economy, and good starting in cold weather.

If SAE 5W-30 oil is not available, SAE 10W-30 oil may be used. However, it should be replaced with SAE 5W-30 at the next oil change.

- **How to read oil container labels**

  The ILSAC (International Lubricant Standardization and Approval Committee) Certification Mark is added to some oil containers to help you select the oil you should use.

- **Engine oil consumption**
  - The amount of engine oil consumed depends on the oil viscosity, the quality of the oil and the way the vehicle is driven.
  - More oil is consumed under driving conditions such as high speeds and frequent acceleration and deceleration.
  - A new engine consumes more oil.
  - When judging the amount of oil consumption, keep in mind that the oil may have become diluted, making it difficult to judge the true level accurately.
  - Oil consumption: Max. 1.1 qt./600 miles, 0.9 Imp.qt./600 miles (1.0 L per 1000 km)
  - If you consume more than 1.1 qt. (1.0 L, 0.9 Imp.qt.) every 600 miles (1000 km), contact your Lexus dealer.
- **After changing the engine oil (U.S.A. only)**

  The oil change system should be reset. Perform the following procedures:

  STEP 1 Switch the display to the odometer. (→P. 130)

  STEP 2 Turn the engine switch to the LOCK position.

  STEP 3 While pressing the trip meter reset button, turn the engine switch to the ON position. Continue to press and hold the button until the trip meter displays 000000.

CAUTION

Used engine oil

- Used engine oil contains potentially harmful contaminants which may cause skin disorders such as inflammation or skin cancer, so care should be taken to avoid prolonged and repeated contact. To remove used engine oil from your skin, wash thoroughly with soap and water.
- Dispose of used oil and filters only in a safe and acceptable manner. Do not dispose of used oil and filters in household trash, in sewers or onto the ground.
  Call your Lexus dealer, service station or auto parts store for information concerning recycling or disposal.
- Do not leave used engine oil within the reach of children.

NOTICE

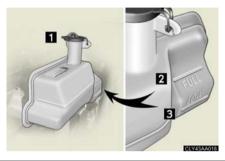
To prevent serious engine damage:

Check the oil level on regular basis.

When replacing the engine oil

- Be careful not to spill engine oil on the vehicle components.
- Avoid overfilling, or the engine could be damaged.
- Check the oil level on the dipstick every time you refill the vehicle.
- Be sure the engine oil filler cap is properly retightened.

Engine coolant

The coolant level is satisfactory if it is between the FULL and LOW lines on the reservoir when the engine is cold.

1 Reservoir cap

2 Full

3 Low

If the level is on or below the LOW line, add coolant up to the FULL line.

---

n **If the coolant level drops within a short time after replenishing**

Visually check the radiator, hoses, engine coolant filler cap, radiator cap, drain cock and water pump.
If you cannot find a leak, have your Lexus dealer pressure test the cap and check for leaks in the cooling system.

n **Coolant selection**

Only use Toyota Super Long Life Coolant or similar high quality ethylene glycol based non-silicate, non-amine, non-nitrite, and non-borate coolant with long-life hybrid organic acid technology.

U.S.A.: Toyota Super Long Life Coolant is a mixture of 50% coolant and 50% deionized water. (Enabled: -31°F [-35°C])

Canada: Toyota Super Long Life Coolant is a mixture of 55% coolant and 45% deionized water. (Enabled: -44°F [-42°C])

For more details about engine coolant, contact your Lexus dealer.

 CAUTION

n **When the engine is hot**

Do not remove the radiator cap.
The cooling system may be under pressure and may spray hot coolant if the cap is removed, causing burns or other injuries.

NOTICE

■ **When adding engine coolant**

Coolant is neither plain water nor straight antifreeze. The correct mixture of water and antifreeze must be used to provide proper lubrication, corrosion protection and cooling. Be sure to read the antifreeze or coolant label.

■ **If you spill coolant**

Be sure to wash it off with water to prevent it damaging parts or paint.

Radiator and condenser

Check the radiator and condenser and clear any foreign objects.
If either of the above parts are extremely dirty or you are not sure of their condition, have your vehicle checked by your Lexus dealer.

CAUTION

■ **When the engine is hot**

Do not touch the radiator or condenser, as they may be hot and you may be burned.

Brake fluid

■ Checking fluid level

The brake fluid level should be between the MAX and MIN lines on the tank.

Make sure to check the fluid type and prepare the necessary items.

Adding fluid

Fluid type	FMVSS No.116 DOT 3 or SAE J1703 brake fluid
Items	Clean funnel

Brake fluid can absorb moisture from the air

Excess moisture in the fluid can cause a dangerous loss of braking efficiency. Use only newly opened brake fluid.

When filling the reservoir

Take care because brake fluid can harm your hands or eyes and damage painted surfaces.
If fluid gets in your eyes, flush your eyes with clean water immediately.

If you still experience discomfort, see a doctor.

NOTICE

If the fluid level is low or high

It is normal for the brake fluid level to go down slightly as the brake pads wear or when the fluid level in the accumulator is high.
If the reservoir needs frequent refilling, it may indicate a serious problem.

Power steering fluid

■ Fluid level

The fluid level should be within the appropriate range.

1 Full (when cold)
2 Add fluid (when cold)
3 Full (when hot)
4 Add fluid (when hot)

Hot: Vehicle has been driven around 50 mph (80 km/h) for 20 minutes, or slightly longer in frigid temperatures. (Fluid temperature, 140°F - 175°F [60°C - 80°C])

Cold: Engine has not been run for about five hours. (Room temperature, 50°F - 85°F [10°C - 30°C])

■ Checking the fluid level

Make sure to check the fluid type and prepare the necessary items.

Fluid type	Automatic transmission fluid DEXRON® II or III
Items	Rag or paper, Clean funnel (only for adding fluid)

STEP 1 Clean all dirt off the reservoir.

STEP 2 Remove the cap by turning it counterclockwise.

STEP 3 Wipe the dipstick clean.

STEP 4 Reinstall and remove the reservoir cap again.

STEP 5 Check the fluid level.

CAUTION

- **When checking the reservoir**

  Take care, as the reservoir may be hot.

 NOTICE

- **When adding fluid**

  Avoid overfilling, or the power steering may be damaged.

- **After replacing the reservoir cap**

  Check the steering box case, vane pump and hose connections for leaks or damage.

Battery

Check the battery as follows.

- **Battery exterior**

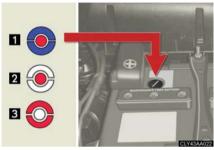
  Make sure that the battery terminals are not corroded and that there are no loose connections, cracks, or loose clamps.

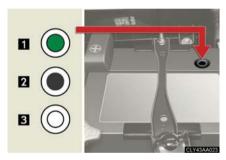
1 Terminals

2 Hold-down clamp

Checking battery condition

Check the battery condition using the indicator color.

▶ Type A

1. Blue: Good condition
2. White: Charging is necessary. Have the vehicle inspected by your Lexus dealer.
3. Red: Not working properly, have the battery checked by your Lexus dealer.

▶ Type B

1. Green: Good condition
2. Dark: Charging is necessary. Have the vehicle inspected by your Lexus dealer.
3. Clear or light yellow: Not working properly, have the battery checked by your Lexus dealer.

Before recharging

When recharging, the battery produces hydrogen gas which is flammable and explosive. Therefore, before recharging:

- If recharging with the battery installed on the vehicle, be sure to disconnect the ground cable.
- Make sure the power switch on the charger is off when connecting and disconnecting the charger cables to the battery.

CAUTION

- **Chemicals in the battery:**

  A battery contains poisonous and corrosive sulfuric acid and may produce hydrogen gas which is flammable and explosive. To reduce the risk of death or serious injury, take the following precautions while working on or near battery:

  - Do not cause sparks by touching the battery terminals with tools.
  - Do not smoke or light a match near the battery.
  - Avoid contact with eyes, skin and clothes.
  - Never inhale or swallow electrolyte.
  - Wear protective safety glasses when working near the battery.
  - Keep children away from the battery.

- **Where to safety charge the battery**

  Always charge the battery in an open area. Do not charge the battery in a garage or closed room where there is not sufficient ventilation.

- **How to recharge the battery**

  Only perform a slow charge (5 A or less). The battery may explode if charged at a quicker rate.

- **Emergency measures regarding electrolyte**

  - If electrolyte gets in your eyes
    Flush your eyes with clean water for at least 15 minutes and get immediate medical attention. If possible, continue to apply water with a sponge or cloth while traveling to the nearest medical facility.
  - If electrolyte gets on your skin
    Wash the affected area thoroughly. If you feel pain or burning, get medical attention immediately.
  - If electrolyte gets on your clothes
    It can soak through clothing on to your skin. Immediately take off the clothing and follow the procedure above if necessary.
  - If you accidentally swallow electrolyte
    Drink a large quantity of water or milk. Follow with milk of magnesia, beaten raw egg or vegetable oil. Get emergency medical attention immediately.

NOTICE

- **When recharging the battery**

  Never recharge the battery while the engine is running. Also, be sure all accessories are turned off.

Washer fluid

If any washer does not work or the low washer fluid warning light comes on, the washer tank may be empty. Add washer fluid.

 CAUTION

- **When refilling the washer fluid**

  Do not refill the washer fluid when the engine is hot or running, as the washer fluid contains alcohol and may catch fire if spilled on the engine etc.

 NOTICE

- **Do not use any fluid other than washer fluid**

  Do not use soapy water or engine antifreeze instead of washer fluid.
  Doing so may cause streaking on the vehicle's painted surfaces.

- **Diluting washer fluid**

  Dilute washer fluid with water as necessary.
  Refer to the freezing temperatures listed on the washer fluid tank.

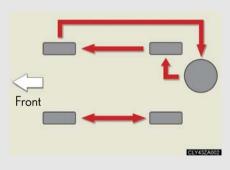
Tires

Replace or rotate tires in accordance with maintenance schedules and treadwear.

Checking tires

1. New tread
2. Treadwear indicator
3. Worn tread

The location of treadwear indicators is shown by the “TWI” or “Δ” marks, etc., molded on the sidewall of each tire.

Check spare tire condition and inflation pressure if not rotated.

Tire rotation

Rotate the tires in the order shown.

Lexus recommends tire rotation in accordance with the maintenance schedule to equalize tire wear and extend tire life.

Do not fail to initialize the tire pressure warning system after tire rotation.

The tire pressure warning system

Your Lexus is equipped with a tire pressure warning system that uses tire pressure warning valves and transmitters to detect low tire inflation pressure before serious problems arise. (→P. 394)

Installing tire pressure warning valves and transmitters

When replacing tires or wheels, tire pressure warning valves and transmitters must also be installed.

When new tire pressure warning valves and transmitters are installed, new tire pressure warning valve and transmitter ID codes must be registered in the tire pressure warning computer and tire pressure warning system must be initialized. Have tire pressure warning valve and transmitter ID codes registered by your Lexus dealer. (→P. 334)

Initializing the tire pressure warning system

■ The tire pressure warning system must be initialized in the following circumstances:

- When changing the tire inflation pressure by changing traveling speed or load weight, etc.
- When changing the tire size.

When the tire pressure warning system is initialized, the current tire inflation pressure is set as the pressure benchmark.

■ How to initialize the tire pressure warning system

STEP 1 Park the vehicle in safe place and turn the engine switch OFF.

While the vehicle is moving, initialization is not performed.

STEP 2 Adjust the tire pressure to the specified cold tire inflation pressure level. (→P. 430)

Make sure to adjust the tire pressure to the specified cold tire inflation pressure level. The tire pressure warning system will operate based on this pressure level.

STEP 3 Turn the engine switch to the ON position.

Push and hold the tire pressure warning reset switch until the tire pressure warning light blinks slowly three times.

STEP 5 Wait for a few minutes with the engine switch is in the ON position, and then turn the engine switch OFF.

Registering and selecting ID codes

Registering ID codes

2 sets of tire pressure warning valve and transmitter ID codes can be registered. Once a second set of tires is registered at “2nd”, you can switch between tire set settings simply by pressing the tire pressure warning select switch.

There are 2 settings:

“MAIN” position: The ID code of the tire pressure warning valve and transmitter on the tires originally installed on the vehicle is registered.

“2nd” position: The ID code is not registered. When you replace a new set of tires, purchase tire pressure warning valves and transmitters from your Lexus dealer and have the new ID code registered by your Lexus dealer.

Selecting ID codes

When replacing tires, make sure to select the ID code set that matches the new tire set. If the tire pressure select switch is set to the wrong tire setting, the tire pressure warning system will not operate properly. After driving for about 20 minutes, the tire pressure warning light comes on after blinking for 1 minute to indicate a system malfunction.

1 "MAIN"
2 "2nd"

When to replace your vehicle's tires

Tires should be replaced if:

- You have tire damage such as cuts, splits, cracks deep enough to expose the fabric or bulges indicating internal damage
- A tire goes flat repeatedly or cannot be properly repaired due to the size or location of a cut or other damage

If you are not sure, consult with your Lexus dealer.

Replacing tires and wheels

If the ID code of the tire pressure warning valve and transmitter is not registered, the tire pressure warning system will not work properly. After driving for about 20 minutes, the tire pressure warning light comes on after blinking for 1 minute to indicate a system malfunction.

Tire life

Any tire over 6 years old must be checked by a qualified technician even if they have seldom or never been used or damage is not obvious.

If the tread wears down below 0.16 in. (4 mm) on snow tires

The effectiveness of snow tires is lost.

Low profile tires

Generally, low profile tires will wear more rapidly and tire grip performance will be reduced on snowy and/or icy roads when compared to standard tires. Be sure to use snow tires or snow chains on snowy and/or icy roads and drive carefully at a speed appropriate for road and weather conditions.

Maximum load of tire

Check that the maximum load of the replaced tire is greater than 1/2 of the Gross Axle Weight Ratings (GAWR) of either the front axle or the rear axle, whichever is greater.
As for the maximum load of the tire, see the load limit at maximum cold tire inflation pressure mentioned on the sidewall of the tire, and as for the Gross Axle Weight Ratings (GAWR), see the Certification Label. (→P. 340, 436).

Tire types

1 Summer tires

Summer tires are high-speed performance tires best suited to highway driving under dry conditions. Since summer tires do not have the same traction performance as snow tires, summer tires are inadequate for driving on snow-covered or icy roads. For driving on snow-covered roads or icy roads, the use of snow tires is recommended. When installing snow tires, be sure to replace all four tires.

2 All season tires

All season tires are designed to provide better traction in snow and to be adequate for driving in most winter conditions, as well as for use year round. All season tires, however, do not have adequate traction performance compared with snow tires in heavy or loose snow. Also, all season tires fall short in acceleration and handling performance compared with summer tires in highway driving.

3 Snow tires

For driving on snow-covered roads or icy roads, we recommend using snow tires. If you need snow tires, select tires of the same size, construction and load capacity as the originally installed tires. Since your vehicle has radial tires as original equipment, make sure your snow tires also have radial construction. Do not install studded tires without first checking local regulations for possible restriction. Snow tires should be installed on all wheels. (→P. 183)

Initializing the tire pressure warning system

Initialize the tires with the tire inflation pressure adjusted to the specified level.

If you push the tire pressure warning reset switch accidentally

If initialization is performed, adjust the tire inflation pressure to the specified level and initialize the tire pressure warning system again.

When the initialization of the tire pressure warning system has failed

Initialization can be completed in a few minutes. However, in the following cases, the settings have not been recorded and the system will not operate properly. If repeated attempts to record tire inflation pressure settings are unsuccessful, have the vehicle inspected by your Lexus dealer.

- When operating the tire pressure warning reset switch, the tire pressure warning light does not flash 3 times.
- After carrying out the initialization procedure, the tire pressure warning light blinks for 1 minute then stays on after driving for about 20 minutes.

Routine tire inflation pressure checks

The tire pressure warning system does not replace routine tire inflation pressure checks. Make sure to check tire inflation pressure as part of your routine of daily vehicle checks.

Tire pressure warning system certification

▶ For vehicles sold in the U.S.A.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

NOTICE:
This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC WARNING:
Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

▶ For vehicles sold in Canada

Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

CAUTION

When inspecting or replacing tires

Observe the following precautions to prevent accidents. Failure to do so may cause damage to parts of the drive train, as well as dangerous handling characteristics, which may lead to fatal or injury accidents.

- Do not mix tires of different makes, models, tread patterns or treadwear.
- Do not use tire sizes other than those recommended by Lexus.
- Do not mix radial, bias-belted, or bias-ply tires.
- Do not mix summer, all season and winter tires.

When initializing the tire pressure warning system

Do not push the tire pressure warning reset switch without first adjusting the tire inflation pressure to the specified level. Otherwise, the tire pressure warning light may not come on even if the tire inflation pressure is low, or it may come on when the tire inflation pressure is actually normal.

NOTICE

- **Repairing or replacing tires, wheels and tire pressure warning valves and transmitters**

  When removing or fitting the wheels, tires or the tire pressure warning valve and transmitter, contact your Lexus dealer as the tire pressure warning valve and transmitter may be damaged if not handled correctly.

- **To avoid damaging the tire pressure warning valves and transmitters**

  Do not use liquid sealants on flat tires.

- **Driving on rough roads**

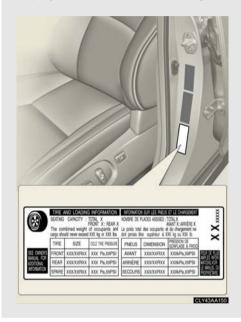
  Take particular care when driving on roads with loose surfaces or potholes.
  These conditions may cause losses in tire inflation pressure, reducing the cushioning ability of the tires. In addition driving on rough roads may cause damage to the tires themselves, as well as the vehicle's wheels and body.

- **If tire inflation pressures become low while driving**

  Do not continue driving, or your tires and/or wheels may be ruined.

Tire inflation pressure

Tire inflation pressure

The recommended cold tire inflation pressure and tire size is displayed on the tire and loading information label. (→P. 430)

Inspection and adjustment procedure

1 Tire valve

2 Tire pressure gauge

STEP 1 Remove the tire valve cap.

STEP 2 Press the tip of the tire pressure gauge onto the tire valve.

STEP 3 Read the pressure using the graduations of the gauge.

STEP 4 If the tire inflation pressure is not within the recommended levels, adjust inflate the tire.
If you add too much air, press the center of the valve to lower.

STEP 5 After completing the tire inflation pressure measurement and adjustment, apply soapy water to the valve and check for leakage.

STEP 6 Reinstall the tire valve cap.

Tire inflation pressure check interval

You should check tire inflation pressure every two weeks, or at least once a month. Do not forget to check the spare.

Effects of incorrect tire inflation pressure

Driving with incorrect tire inflation pressure may result in the following:

- Reduced fuel efficiency
- Reduced driving comfort and tire life
- Reduced safety
- Damage to the drive train

If a tire needs frequent refilling, have it checked by your Lexus dealer.

Instructions for checking tire inflation pressure

When checking tire inflation pressure, observe the following:

- Check only when the tires are cold.
  If your vehicle has been parked for at least 3 hours and has not been driven for more than 1 mile or 1.5 km, you will get an accurate cold tire inflation pressure reading.
- Always use a tire pressure gauge.
  The appearance of the tire can be misleading. In addition, tire inflation pressures that are even just a few pounds off can degrade ride and handling.
- Do not bleed or reduce tire inflation pressure after driving. It is normal for the tire inflation pressure to be higher after driving.
- Never exceed the vehicle capacity weight.
  Passengers and luggage weight should be placed so that the vehicle is balanced.

CAUTION

■ **Proper inflation is critical to save tire performance**

Keep your tires properly inflated.
Otherwise, the following conditions may occur and result in an accident causing death or serious injury.

- Excessive wear
- Uneven wear
- Poor handling
- Possibility of blowouts resulting from overheated tires
- Poor sealing of the tire bead
- Wheel deformation and/or tire separation
- A greater possibility of tire damage from road hazards

NOTICE

■ **When inspecting and adjusting tire inflation pressure**

Be sure to reinstall the tire valve caps.
Without the valve caps, dirt or moisture could get into the valve and cause air leakage, which could result in an accident. If the caps have been lost, replace them as soon as possible.

Wheels

If a wheel is bent, cracked or heavily corroded, it should be replaced. Otherwise, the tire may separate from the wheel or cause loss of handling control.

n Wheel selection

When replacing wheels, care should be taken to ensure that they are equivalent to those removed in load capacity, diameter, rim width, and offset.
Replacement wheels are available at your Lexus dealer.

Lexus does not recommend using:

- Wheels of different sizes or types
- Used wheels
- Bent wheels that have been straightened

n Aluminum wheel precautions

- Use only Lexus wheel nuts and wrenches designed for use with your aluminum wheels.
- When rotating, repairing or changing your tires, check that the wheel nuts are still tight after driving 1000 miles (1600 km).
- Be careful not to damage the aluminum wheels when using tire chains.
- Use only Lexus genuine balance weights or equivalent and a plastic or rubber hammer when balancing your wheels.

---

n When replacing wheels

The wheels of your Lexus are equipped with tire pressure warning valves and transmitters that allow the tire pressure warning system to provide advanced warning in the event of a loss in tire inflation pressure. Whenever wheels are replaced, the tire pressure warning valves and transmitters must be installed. (→P. 333)

CAUTION

When replacing wheels

- Do not use wheels that are a different size from those recommended in the Owner's Manual, as this may result in loss of handling control.
- Never use an inner tube in a leaking wheel which is designed for a tubeless tire. Doing so may result in an accident, causing death or serious injury.

NOTICE

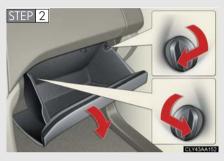
Replacing tire pressure warning valves and transmitters

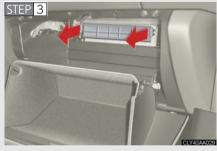
- Because tire repair or replacement may affect the tire pressure warning valves and transmitters, make sure to have tires serviced by your Lexus dealer or other qualified service shop. In addition, make sure to purchase your tire pressure warning valves and transmitters at your Lexus dealer.
- Ensure that only genuine Lexus wheels are used on your vehicle.
  Tire pressure warning valves and transmitters may not work properly with non-genuine wheels.

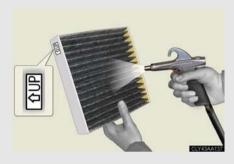
Air conditioning filter

The air conditioning filter must be cleaned or changed regularly to maintain air conditioning efficiency.

Removal method

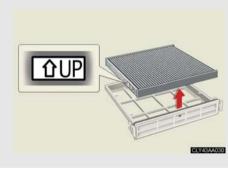
STEP 1 Turn the engine switch to the LOCK position.

Open the glove box.

Remove the 2 pins installed on the upper part of the glove box and lower the glove box.

Remove the filter case.

Cleaning method

If the filter is dirty, clean by blowing compressed air through the filter from the downward side.

Hold the air gun 2 in. (5 cm) from the filter and blow for approximately 2 minutes at 72 psi (500 kPa, 5.0 kgf/cm^2 or bar).

If it is not available, have the filter cleaned by your Lexus dealer.

Replacement method

Remove the air conditioning filter from the filter case and replace it with a new one.

The ↑UP marks shown on the filter and the filter case should be pointing up.

Checking interval

Inspect, clean and replace the air conditioning filter according to the maintenance schedule. In dusty areas or areas with heavy traffic flow, more frequent cleaning or early replacement may be required. (For scheduled maintenance information, please refer to the “Warranty and Service Guide/Owner's Manual Supplement/ Scheduled Maintenance”.)

If air flow from the vents decreases dramatically

The filter may be clogged. Check the filter and replace if necessary.

NOTICE

To prevent damage to the system

- When using the air conditioning system, make sure that a filter is always installed.
- When cleaning the filter, do not clean the filter with water.

Wireless remote control battery

Replace the battery with a new one if it is discharged.

n You will need the following items:

l Small Phillips-head screwdriver

l Lithium battery (CR2016)

n Replacing the battery

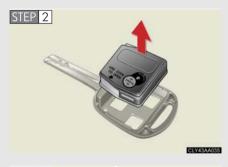
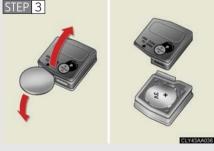
STEP 1

Remove the screw and cover.

Push the cover in the arrow direction.

STEP 2

Remove the module.

STEP 3

Open the case cover and remove the depleted battery.

Insert a new battery with the + terminal facing up.

■ **If the battery is discharged**

The following symptoms may occur.

- The wireless remote control will not function properly.
- The operational range is reduced.

■ **Use a CR2016 lithium battery**

- Batteries can be purchased at your Lexus dealer, jewelers, or camera stores.
- Replace only with the same or equivalent type recommended by a Lexus dealer.
- Dispose of used batteries according to the local laws.

■ **Removed battery and other parts**

Keep away from children.
These parts are small and if swallowed by a child they can cause choking.

■ **For normal operation after replacing the battery**

Observe the following precautions to prevent accidents.

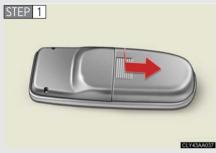
- Always work with dry hands.
  Moisture may cause the battery to rust.
- Do not touch or move any other components inside the remote control.
- Do not bend either of the battery terminals.

Rear seat entertainment system controller

Replace the batteries with new them if they are discharged.

Necessary item for replacing:

3 AA batteries

Replacing the batteries

STEP 1 Remove the cover.

STEP 2 Remove the depleted batteries and install the new them.

If the batteries are discharged

The following symptoms may occur.

- The rear seat entertainment system control will not function properly.
- The operational range is reduced.

When using 3 AA batteries

- Batteries can be purchased at your Lexus dealer, electric appliance shop, or camera stores.
- Replace only with the same or equivalent type recommended by a Lexus dealer.
- Dispose of used batteries according to the local laws.

CAUTION

Removed battery and other parts

Keep away from children.
These parts are small and if swallowed by a child they can cause choking.

NOTICE

For normal operation after replacing the battery

Observe the following precautions to prevent accidents.

- Always work with dry hands.
  Moisture may cause the battery to rust.
- Do not touch or move any other components inside the remote control.
- Do not bend either of the battery terminals.

Checking and replacing fuses

If any of the electrical components do not operate, a fuse may have blown. If this happens, check and replace the fuses as necessary.

STEP 1 Turn the engine switch to the LOCK position.

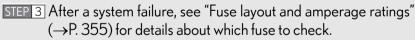
STEP 2 Open the fuse box cover.

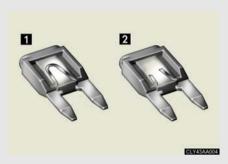
▶ Engine compartment

Push the tabs in and lift the lid off.

▶ Driver's side instrument panel

Remove the lid.

STEP 3 After a system failure, see "Fuse layout and amperage ratings" (→P. 355) for details about which fuse to check.

Remove the fuse with the pull-out tool.

STEP 5 Check if the fuse has blown.

▶ Type A

1 Normal fuse

2 Blown fuse

Replace it with one of an appropriate amperage rating. The amperage rating can be found on the fuse box lid.

▶ Type B and C

1 Type B

2 Type C

3 Normal fuse

4 Blown fuse

Replace it with one of an appropriate amperage rating. The amperage rating can be found on the fuse box lid.

Fuse layout and amperage ratings

■ Engine compartment

Fuse		Ampere	Circuit
1	AIRSUS*1	60	Electronically modulated air suspension
	INP-J/B*2	100	HEATER, TAIL, PANEL, FR FOG, CIG, RADIO NO. 2, ECU-ACC, PWR OUTLET NO. 1, GAUGE NO. 1, ECU-IG NO.1, FR WIP, RR WIP, WASHER, SEAT HTR, ECU-IG NO. 2, P/SEAT, PWR, TI&TE, RR DOOR LH, RR DOOR RH, MPX-B, AM1, DOOR NO.2, STOP, OBD, FUEL OPN, AIRSUS (7.5 A), S/ROOF, FR DEF, RR FOG

*1: With electronically modulated air suspension

*2: Without electronically modulated air suspension

Fuse		Ampere	Circuit
2	ALT	140	INP-J/B, AIRSUS (60 A), ABS NO. 1, ABS NO. 2, RDI FAN, RR DEF, HEATER, PBD, H-LP CLN/MSB, H-LP CLN, POWER OUTLET NO. 2, TOWING, TAIL, PANEL, FR FOG, CIG, RADIO NO. 2, ECU-ACC, PWR OUTLET NO. 1, GAUGE NO. 1, ECU-IG NO. 1, FR WIP, RR WIP, WASHER, HEATER, SEAT HTR, ECU-IG NO. 2, P/SEAT, PWR, CRT, TI&TE, RR DOOR LH, RR DOOR RH, MPX-B, AM1, DOOR NO. 2, STOP, OBD, FUEL OPN, AIRSUS (7.5 A), S/ROOF, FR DEF, RR FOG
3	PBD	30	Power back door
4	H-LP CLN/MSB*1	30	Headlight cleaner
	H-LP CLN*2	30	Headlight cleaner
5	ABS NO. 1	30	Anti-lock brake system, vehicle stability control system, traction control system, brake assist system
6	RR DEF	40	Rear window defogger
7	HEATER	50	Air conditioning system, rear window defogger
8	DRL/WIP-S	7.5	Daytime running light system
9	H-LP L LWR	15	Left-hand headlight (low beam)
10	H-LP L UPR	15	Left-hand headlight (high beam)
11	H-LP R UPR	15	Right-hand headlight (high beam)

*1: With electronically modulated air suspension

*2: Without electronically modulated air suspension

Fuse		Ampere	Circuit
12	TOWING	30	Trailer lights
13	CRT	7.5	Audio system
14	ABS NO. 2	50	Anti-lock brake system, vehicle stability control system, traction control system, brake assist system
15	RDI FAN	50	Electric cooling fans
16	HAZ	15	Turn signal lights
17	A/F	25	Multiport fuel injection system/ sequential multiport fuel injection system
18	ALT-S	7.5	Charging system
19	ETCS	10	Multiport fuel injection system/ sequential multiport fuel injection system
20	HORN	10	Horns
21	MAIN	40	Daytime running light system, left-hand headlight, right-hand headlight, H-LP R LWR, H-LP R UPR, H-LP L UPR, H-LP L LWR, DRL
22	AM2	30	Starting system, GAUGE NO. 2, IGN, IG2
23	RADIO NO. 1	15	Audio system, navigation system

Fuse		Ampere	Circuit
24	ECU-B	7.5	Power window, multiplex communication system, gauge and meters, instrument cluster lights, instrument panel lights, air conditioning system, garage door opener, illuminated entry system, wireless remote control system, power back door, driving position memory system, navigation system display, moon roof, tilt and telescopic steering, power seats, outside rear view mirror, windshield wipers
25	DOME	7.5	Gauge and meters, personal lights, vanity lights, door courtesy lights, inside door handle lights, engine switch light, foot well lighting, scuff lighting, luggage compartment light, interior light
26	AMP	30	Audio system
27	DOOR NO. 1	25	Multiplex communication system
28	INJ	10	Multiport fuel injection system/ sequential multiport fuel injection system
29	EFI NO. 1	25	Multiport fuel injection system/ sequential multiport fuel injection system, EFI NO. 2

Fuse		Ampere	Circuit
30	H-LP R LWR	15	Right-hand headlight (low beam)
31	PWR OUTLET NO. 2	20	Power outlet
32	EFI NO. 2	10	Multiport fuel injection system/ sequential multiport fuel injection system

n Driver’s side instrument panel

Fuse		Ampere	Circuit
1	RR DOOR RH	20	Rear right side power window
2	RR DOOR LH	20	Rear left side power window
3	FUEL OPN	7.5	Fuel filler door opener
4	FR FOG	15	Front fog lights
5	OBD	7.5	On-board diagnosis system
6	FR DEF	25	Windshield wiper de-icer, MIR HTR
7	STOP	10	Tail lights, high mounted stoplight, rear light failure warning light, anti-lock brake system, vehicle stability control system, traction control system, brake assist system, electronically modulated air suspension, shift lock control system, multiport fuel injection system/sequential multiport fuel injection system
8	TI&TE	30	Tilt and telescopic steering
9	MPX-B	7.5	Security system

Fuse		Ampere	Circuit
10	AM1	7.5	Starter system
11	RR FOG	7.5	No circuit
12	AIR SUS	7.5	Electronically modulated air suspension
13	DOOR NO. 2	25	Multiplex communication system
14	S/ROOF	30	Moon roof
15	TAIL	10	Front fog lights, instrument cluster lights, instrument panel lights, front side marker lights, tail lights, licence plate lights, towing converter
16	PANEL	7.5	Glove box light, instrument cluster lights, instrument panel lights, console box light, audio system, power outlet, garage door opener switch, electronically controlled automatic transmission system, headlight cleaner, electronically modulated air suspension, seat heaters, steering wheel audio switches, power back door

Fuse		Ampere	Circuit
17	ECU-IG NO. 1	7.5	Power rear view mirror control, moon roof, multiplex communication system, navigation system display, shift lock control system, multiplex communication system (power door lock system, wireless remote control system), driving position memory system, vehicle stability control system, traction control system, windshield wipers, electronically controlled automatic transmission, seat heaters, power seats, tilt and telescopic steering, power back door, electronically modulated air suspension
18	ECU-IG NO. 2	10	Automatic headlight leveling system, vehicle stability control system, dynamic laser cruise control, headlight cleaner, adaptive front-lighting system
19	HEATER	7.5	Electric cooling fans, air conditioning system, rear window defogger, engine switch, windshield wiper de-icer
20	WASHER	20	Windshield washer
21	SEAT HTR	20	Seat heaters
22	GAUGE NO.1	7.5	Instrument cluster lights, instrument panel lights, emergency flashers, seat belt, power outlet, rear light failure warning light, multiport fuel injection system/sequential multiport fuel injection system, back-up lights
23	FR WIP	30	Windshield wipers

Fuse		Ampere	Circuit
24	RR WIP	15	Rear window wiper
25	IG2	7.5	Multiport fuel injection system/ sequential multiport fuel injection system
26	IGN	10	SRS airbag system, multiport fuel injection system/sequential multiport fuel injection system, front passenger occupant classification system, stop lights
27	GAUGE NO. 2	7.5	Gauge and meters
28	ECU-ACC	7.5	Navigation system display, power rear view mirror control, shift lock control system, multiplex communication system
29	CIG	15	Cigarette lighter, power outlet
30	PWR OUTLET NO. 1	15	Power outlet
31	RADIO NO. 2	7.5	Instrument cluster lights, instrument panel lights, navigation system, audio system
32	MIR HTR	10	Outside rear view mirror defogger
33	P/SEAT	30	Power seats
34	PWR	30	Power window, multiplex communication system (power door lock system, wireless remote control system), outside rear view mirror

- **After a fuse is replaced**
  - If the lights do not turn on even after the fuse has been replaced, a bulb may need replacement. (→P. 366)
  - If the replaced fuse blows again, have the vehicle inspected by your Lexus dealer.
- **If there is an overload in the circuits**

  The fuses are designed to blow before the entire wiring harness is damaged.

CAUTION

- **To prevent system breakdowns and vehicle fire**

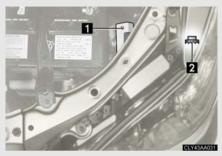
  Observe the following precautions.
  Failing to do so may cause damage, and possibly a fire or injury.
  - Never use a fuse of a higher amperage rating than indicated, or use any other object in place of a fuse.
  - Always use a genuine Lexus fuse or equivalent.
    Never replace a fuse with a wire, even as a temporary fix.
    This can cause extensive damage or even fire.
  - Do not modify fuses or the fuse box.

NOTICE

- **Before replacing fuses**

  Have the cause of electrical overload determined and repaired by your Lexus dealer.

Headlight aim (vehicles with discharge headlights)

Vertical movement adjusting screw and bolt

1. Adjustment screw
2. Adjustment bolt

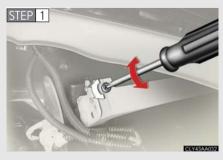
Before checking the headlight aim

STEP 1 Make sure the vehicle has a full tank of gas and the area around the headlight is not deformed.

STEP 2 Park the vehicle on level ground.

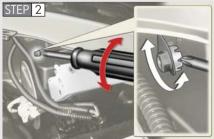
STEP 3 Sit in the driver's seat.

STEP 4 Bounce the vehicle several times.

Adjusting the headlight aim

STEP 1

Turn the screw in either direction using a Phillips-head screwdriver.

Remember the turning direction and the number of turns in mind.

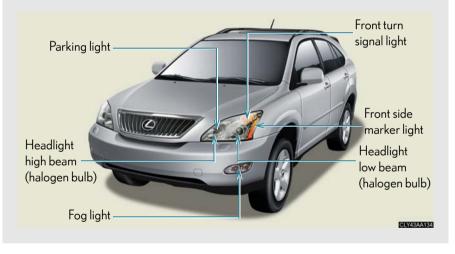
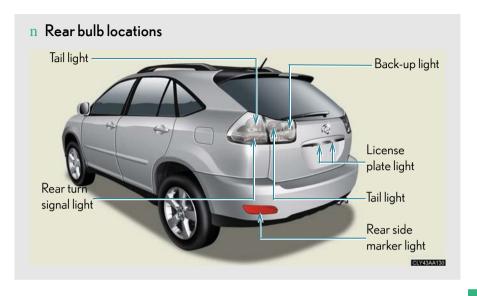
STEP 2

Turn the bolt the same number of turns and in the same direction as step 1 using a Phillips-head screwdriver.

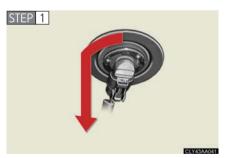
If the error is over the value specified above, take the vehicle to your Lexus dealer to adjust the headlight aim.

Light bulbs

You may replace the following bulbs yourself. For more information about replacing other light bulbs, contact your Lexus dealer.

- **Prepare a replacement light bulb.**
  Check the wattage of the light bulb being replaced. (→P. 432)
- **Remove the engine compartment cover.**
  →P. 319
- **Turn the power back door main switch OFF.**
  →P. 33
- **Front bulb locations**

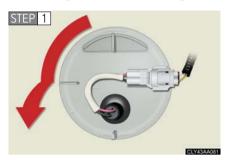
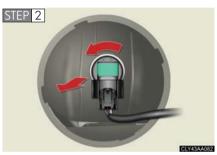
Rear bulb locations

Replacing light bulbs

Headlight high beam (halogen bulb)

STEP 1

Turn the bulb base counterclockwise.

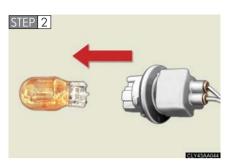
STEP 2

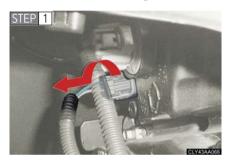
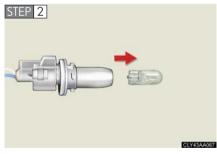
Unplug the connector while depressing the lock release.

n Headlight low beam (halogen bulb)

Turn the cover counterclockwise.

Turn the bulb base counterclockwise.

Unplug the connector while depressing the lock release.

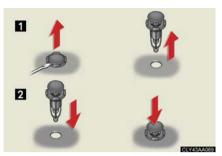
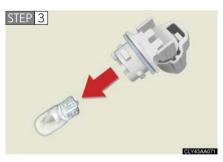
n Front turn signal lights

Turn the bulb base counterclockwise.

Remove the light bulb.

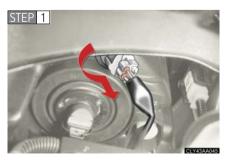
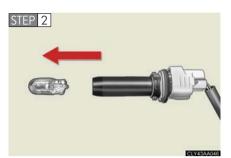
Front side marker lights

Turn the bulb base counterclockwise.

Remove the light bulb.

Rear side marker lights

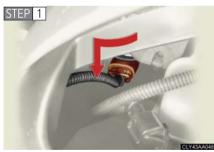
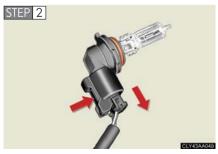
Right-hand side only:

Remove the bolts using a Phillips-head screwdriver and remove the clips.

1 Removing clip
2 Installing clip

STEP 2 Turn the bulb base counterclockwise.

STEP 3 Remove the light bulb.

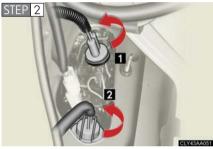
Parking lights

STEP 1 Turn the bulb base counterclockwise.

Remove the light bulb.

n Fog lights

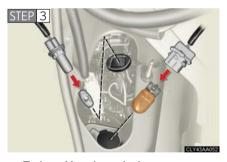
There are access holes for the fog lights.

Turn the bulb base counterclockwise.

Unplug the connector while depressing the lock release.

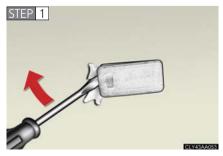
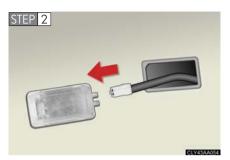
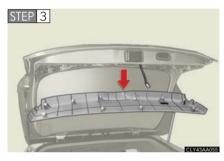
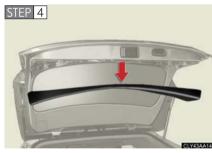
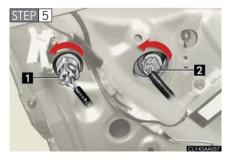
Rear turn signal and tail lights

Remove the access hole cover.

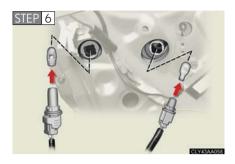
Use a flathead screwdriver which is wrapped with a cloth.

1 Tail light

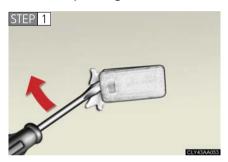
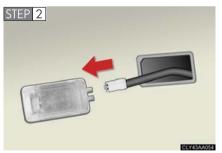
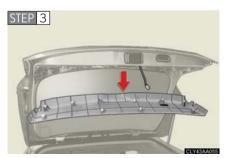
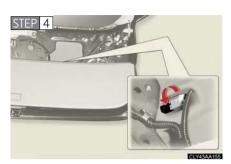
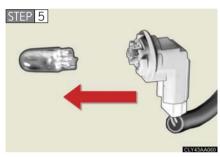
2 Rear turn signal light

Turn the bulb base counterclockwise.

Remove the light bulb.

Tail and back-up lights

Open the back door and remove the luggage compartment light unit.

Pull out the connector.

Remove the upper trim board.

Remove the lower trim board.

1 Tail light

2 Back-up light

Turn the bulb base counterclockwise.

Remove the light bulb.

License plate lights

Open the back door and remove the luggage compartment light unit.

Pull out the connector.

Remove the upper trim board.

Turn the bulb base counterclockwise.

Remove the light bulb.

Bulbs other than the above

If any of the bulbs listed below has burnt out, have your Lexus dealer replace it.

- Headlight low beams (discharge bulbs)
- Stop lights
- High mounted stoplight

n **Condensation build-up on the inside of the lens**

Contact your Lexus dealer for more information in the following situations. Temporary condensation build-up on the inside of the headlight lens does not indicate a malfunction.

l Large drops of water are built up on the inside of the lens.

l Water has built up inside the headlight.

n **Discharge headlights**

If voltage to the discharge bulbs is insufficient, the bulbs may not come on, or may go out temporarily. The discharge bulbs will come on when normal power is restored.

n **LED stop lights**

The stop lights and high mounted stoplight consist of a number of LEDs. If any of the LEDs burn out, take your vehicle to your Lexus dealer to have the light replaced.
If two or more LEDs in a stop light burn out, your vehicle may not conform to local laws (SAE).

CAUTION

- **Replacing light bulbs**
  - Turn off the headlights. Do not attempt to replace the bulb immediately after turning off the headlights.
    The bulbs become very hot and may cause burns.
  - Do not touch the glass portion of the light bulb with bare hands. Hold the bulb by the plastic or metal portion.
    If the bulb is scratched or dropped it may blow out or crack.
  - Fully install light bulbs and any parts used to secure them.
    Failing to do so may result in heat damage, fire, or water entering the headlight unit. This may damage the headlights or cause condensation to build up on the lens.
  - Do not attempt to take apart or repair the low beam discharge headlight bulbs, connectors, power supply circuits, or related components.
    Doing so could result in electric shock and serious injury or death.
- **Discharge headlights**
  - Contact your Lexus dealer before replacing discharge headlights (including light bulbs).
  - Do not touch the high-intensity discharge headlight's high voltage socket when the headlights are turned on.
    An extremely high voltage of 20000 V will be discharged and could result in serious injury or death by electric shock.
- **To prevent damage or fire**
  Make sure bulbs are fully seated and locked.